NPTEL

NPTEL ONLINE CERTIFICATION COURSE

Discrete Mathematics
Set Theory

Cardinality of Union of three sets

With
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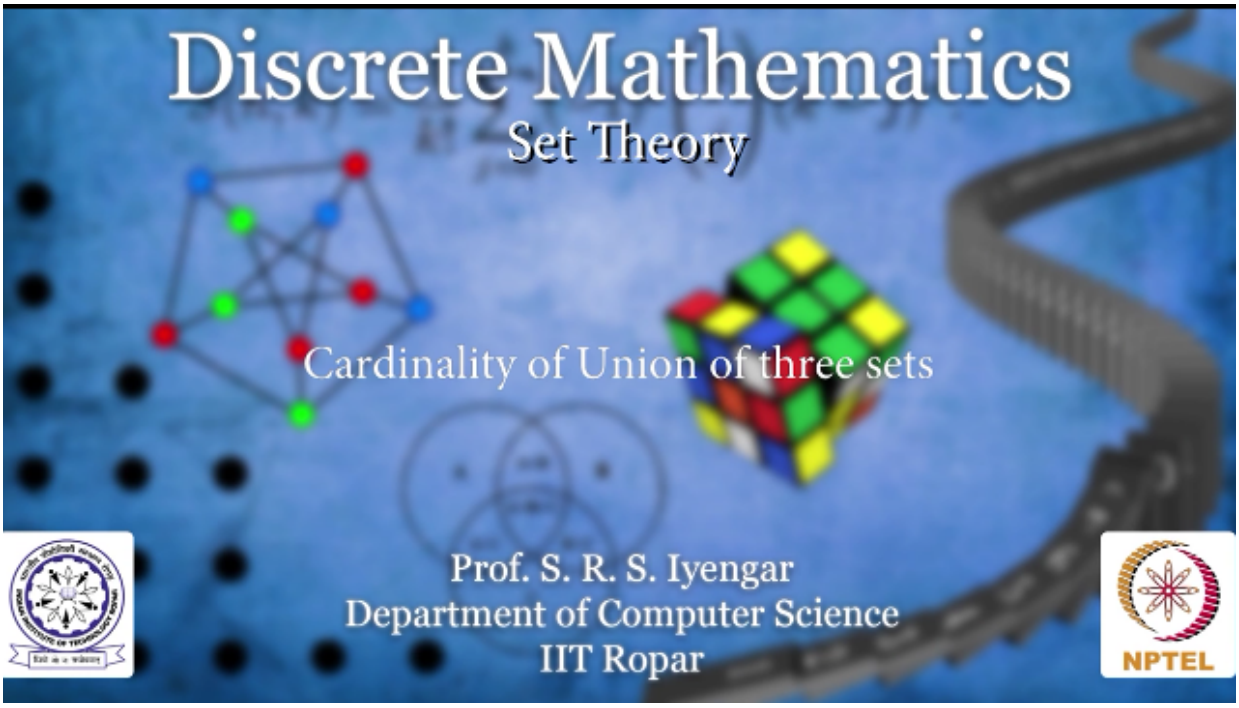
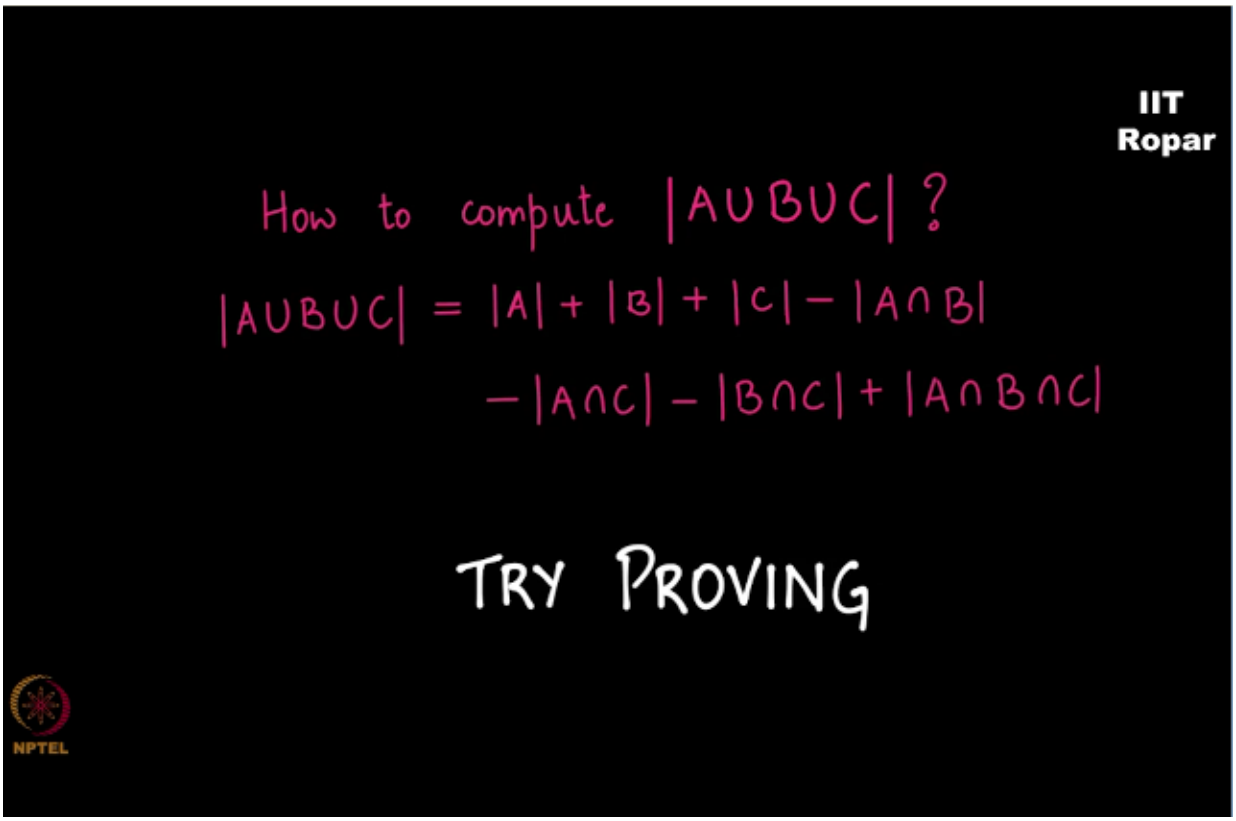


We saw an interesting result and an application of it, now instead of 2 sets, what if you had 3 sets, by that we mean how would you compute the cardinality of A union B union C, well the formula goes like this, it's a little complicated, it is equal to cardinality of A + cardinality of B + cardinality of C – the cardinality of A intersection B – the cardinality of A intersection C – cardinality of B intersection C + cardinality of A intersection B intersection C, try proving to solve by yourself and if you are unable to prove it don't worry as we told there is a chapter



exclusively on this, in fact we will be proving the generalized case there on what would be the cardinality of the union of some K sets, not necessarily 3, K sets, it looks little weird you see, you add, you subtract and then you add, you will know the reason for this in the fourth coming chapter called the principle of inclusion and exclusion, but as of now you can try solving this all by yourself.

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